IN THE SPECIFICATION

Please amend the first paragraph of the application (under the heading "MIXER/FLOW CONDITIONER") to read as follows:

This invention was made with U.S. government support under NASA Contract Number NA[[5]]S3-97-013. The U.S. government has certain rights in this invention.

Please amend the last paragraph of the Background of the Invention on page 3, lines 14-19, to read as follows:

As those skilled in the art of mixing/flow conditioning realize, to have a swirl sufficient enough to create a recirculation zone suitable for supporting an autoignition event or flame holding, the swirl number of the flow stream must be greater than about 0.6. Swirl numbers less than 0.2 are considered to indicate that there is insufficient recirculation present to support autoignition or flame holding. ~~While,~~ while swirl numbers of below 0.03 indicate a conditioned flow.

Please amend the first paragraph of the Summary of the Invention on page 3, lines 23-30, to read as follows:

The present invention is directed in one aspect to a mixer/flow conditioner that includes at least three successive partitions defining at least two gaps therebetween. Means are provided within each gap that define a plurality of passages between each pair of successive partitions. At least one passage in each gap is oriented to impart a tangential velocity component to a fluid, hereinafter referred to as a packet, passing therethrough. The at least one ~~passages~~ passage in each gap ~~cooperating~~ cooperates with the packet passing therethrough to convert an initial flow stream into a final flow stream having a swirl number less than about 0.2.

Please amend the first full paragraph on page 4, lines 6-8, to read as follows:

Preferably, the means for defining a plurality of passages [[in]] is a corrugated strip. However, the invention should not be considered so limited as walls or structures that act as partitions could be used.

Please amend the second paragraph of the Detailed Description on page 5, lines 1-10, to read as follows:

In the illustrated embodiment, the passages 18 within a gap 14 are approximately of equal size (length, entrance hydraulic diameter (two times the cross-sectional area divided by the wetted perimeter), and exit hydraulic diameter) and shape. The passages 18 in an inner gap 30 have an orientation indicated by the arrow 26[[A]]B such that a fluid passing therethrough will be given a velocity component tangential to a circle defined by the position vector 28 thereby adopting a counter-clockwise rotation. The passages 18 in an outer gap 32 have an orientation indicated by the arrow 26[[B]]A such that a fluid passing therethrough will be given a velocity component tangential to a circle defined by the position vector 28 thereby adopting a clockwise rotation.

Please amend the sixth paragraph of the Detailed Description on page 7, lines 1-9, to read as follows:

In the case of the embodiment depicted in Fig. 1 this cooperation is achieved as follows. The passages 18 in a gap 14 are generally of the same size and orientation. Additionally, the passages 18 in the inner gap 30 and the outer gap 32 are generally of the same size with opposite but generally equal orientations. Therefore when an initial flow stream [[30]] 34 encounters the mixer/flow conditioner 10, the initial flow stream [[30]] 34 is broken down into a plurality of packets 38 (the portion of the flow stream [[30]] 34 that enters a given passage 18), the packets 38 are of approximately the same mass and the mass of all the packets 38 within the inner gap 30 and the outer gap 32 are of approximately the same mass.

Please amend the seventh paragraph of the Detailed Description on page 7, lines 11-23, to read as follows:

The passages 18, however, in the inner gap 30 and the outer gap 32 vary in tangential orientation 26, such that the packets 38 in the inner gap 30 upon exiting passages 18 have a counter-clockwise rotation and the packets 38 in the outer gap 32 have a clockwise rotation. Therefore, when a packet 38 exits a passage 18, the packet 38 leaves the passage 18 having a angular momentum (the cross product of a position vector of the passage 26, the mass of the packet, and the tangential velocity component of the packet 38). Depending upon which gap 14 the passage 18 is located in, the angular momentum is either positive or negative (based on an arbitrary assignment of clockwise or counter-clockwise as positive). Where the initial flow stream [[30]] 34 has a uniform velocity profile, the sum of the angular momenta for all the exiting packets 38 is approximately equal to zero, thus achieving in a final flow stream 36 (the recombination of all packets 38) having the desired turbulent flow with the desired swirl number.

Please amend the thirteenth paragraph of the Detailed Description on page 9, lines 6-11, to read as follows:

Referring to Fig. 2, a fuel injector 44 is placed in the center 40 of the mixer/flow conditioner 10 such that a fuel 46 exiting the fuel injector 44 is mixed with an initial flow stream 34, air, exiting the mixer/flow conditioner 10 as a final flow stream 36. Other bodies such as solid hubs can also be placed in the center. The fuel injector 44 is placed such that the mixer/flow conditioner 10 and the fuel injector 44 cooperate to mix the fuel [[44]] 46 into the final flow stream 36.